



<b>IMPORTANT FOR FUTURE REFERENCE</b> Please complete this information and retain this manual for the life of the equipment:
Model #: _____
Serial #: _____
Date Purchased: _____

## Installation & Operation Manual

# Direct Steam Modular Tilting Kettles DMT-6S-(6, -10, -12), DMT-10S-(6, -10, -12) & DMT-12S-(6, -10, -12)



Model DMT-10S-10

### **WARNING**

Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

### **SOUTHBEND STEAM**

 **MIDDLEBY** A Middleby Company

1100 Old Honeycutt Road Fuquay-Varina, North Carolina 27526 USA




[www.southbendnc.com](http://www.southbendnc.com)



## SAFETY PRECAUTIONS

Before installing and operating this equipment, be sure everyone involved in its operation is fully trained and aware of precautions. Accidents and problems can be caused by failure to follow fundamental rules and precautions.

The following symbols, found throughout this manual, alert you to potentially dangerous conditions to the operator, service personnel, or to the equipment.

 <b>DANGER</b>	This symbol warns of immediate hazards that will result in severe injury or death.
 <b>WARNING</b>	This symbol refers to a potential hazard or unsafe practice that could result in injury or death.
 <b>CAUTION</b>	This symbol refers to a potential hazard or unsafe practice that could result in injury, product damage, or property damage.
<b>NOTICE</b>	This symbol refers to information that needs special attention or must be fully understood, even though not dangerous.

## IMPORTANT NOTES FOR INSTALLATION AND OPERATION

### **WARNING**

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

### **WARNING**

**FOR YOUR SAFETY:**

Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

### **WARNING**

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### **WARNING**

Disconnect the power supply to the appliance before cleaning or servicing.

### **CAUTION**

Operating, testing, and servicing should only be performed by qualified personnel.

### **NOTICE**

This product is intended for commercial use only. NOT FOR HOUSEHOLD USE.

### **NOTICE**

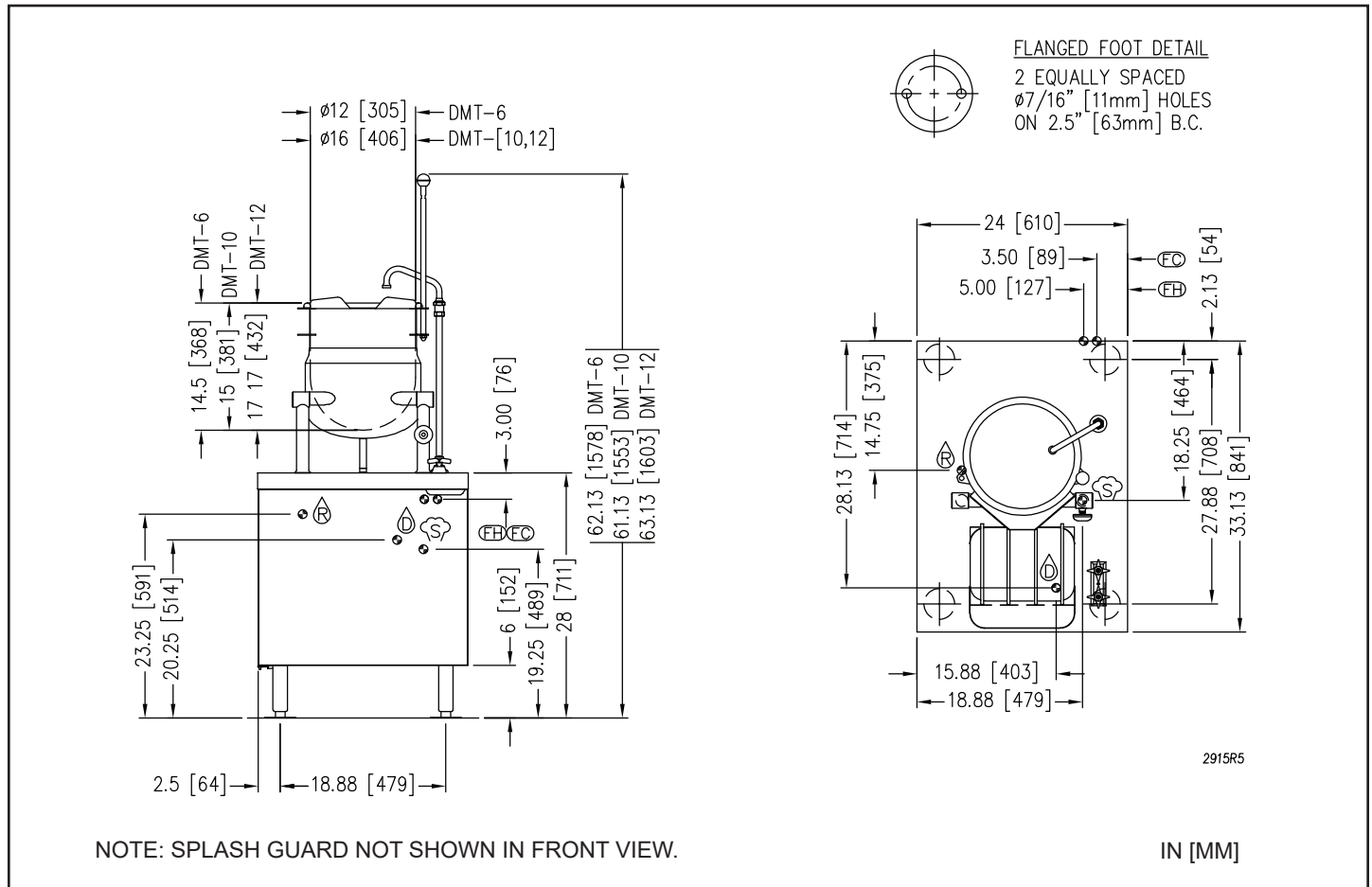
This manual should be retained for future reference.

RETAIN THIS MANUAL FOR FUTURE REFERENCE.

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# SERVICE CONNECTIONS



**SERVICE CONNECTIONS**

- STEAM SUPPLY: 3/4" (19 mm) IPS for incoming steam at 5-45 PSI(34-310 kPa).\*
- CONDENSATE RETURN: 1/2" (13 mm) IPS.
- FAUCET COLD WATER: 3/8" (10 mm) O.D. tubing at 25-50 PSI (170-345 kPa), NSF-61 compliant.
- FAUCET HOT WATER: 3/8" (10 mm) O.D. tubing at 25-50 PSI (170-345 kPa), NSF-61 compliant.
- SINK DRAIN: 1-1/8" (29 mm) O.D. tubing.

\* Pressure reducing valve is required if incoming pressure exceeds 45 PSI(310 kPa).

**ELECTRICAL CHARACTERISTICS**

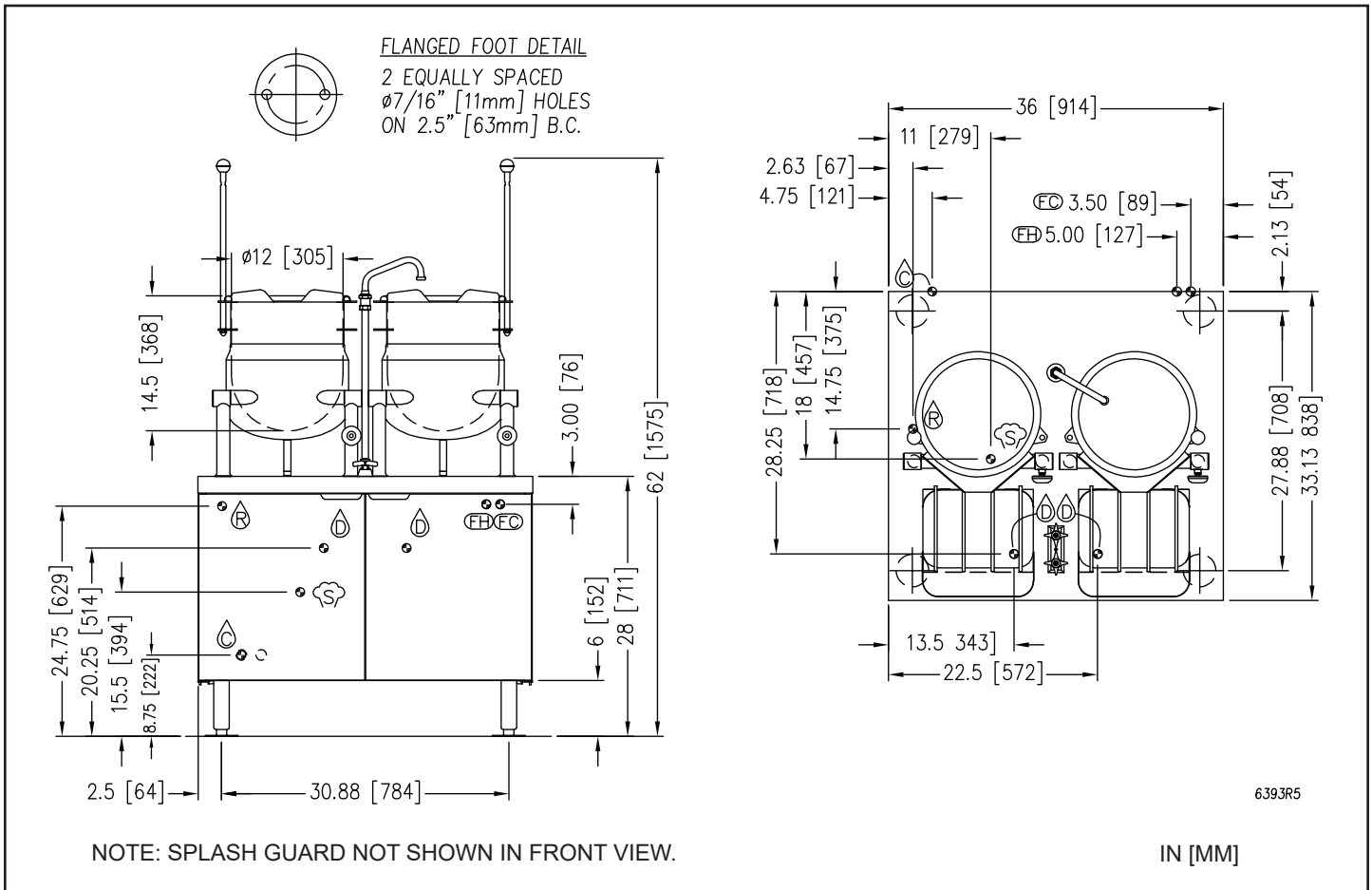
MODEL	CAPACITY	SHIPPING WEIGHT	MIN. CLEARANCE
DMT-6S	6 gallon (23 litre)	225 lbs. [102 kg.]	SIDES 0 [0 mm]
DMT-10S	10 gallon (38 litre)	245 lbs. [111 kg.]	BACK 0 [0 mm]

**DISCLAIMER**

**Terry System Cartridge Changes / Installation** – “2-3 gallons of water MUST be purged at each cartridge change or new installation prior to water supply being fed to the steamer. Failure to do so can result in component damage within the steamer which is not covered under warranty. For additional guidance on proper installation, refer to install documentation provided with each Terry System and Replacement Cartridge Set.”

As continued product improvement is a policy of Southbend Steam, specifications are subject to change without notice.





**SERVICE CONNECTIONS**

- STEAM SUPPLY: 3/4" (19 mm) IPS for incoming steam at 5-45 PSI (34-310 kPa).\*
- CONDENSATE RETURN: 1/2" (13 mm) IPS.
- COLD WATER: 1/2" (13 mm) NPT for cold water to faucet, to fill kettle.
- FAUCET COLD WATER: 3/8" (10 mm) O.D. tubing at 25-50 PSI (170-345 kPa), NSF-61 compliant.
- FAUCET HOT WATER: 3/8" (10 mm) O.D. tubing at 25-50 PSI (170-345 kPa), NSF-61 compliant.
- SINK DRAIN: 1-1/8" (29 mm) O.D. tubing.

\* Pressure reducing valve is required if incoming pressure exceeds 50 PSI (345 kPa).

**ELECTRICAL CHARACTERISTICS**

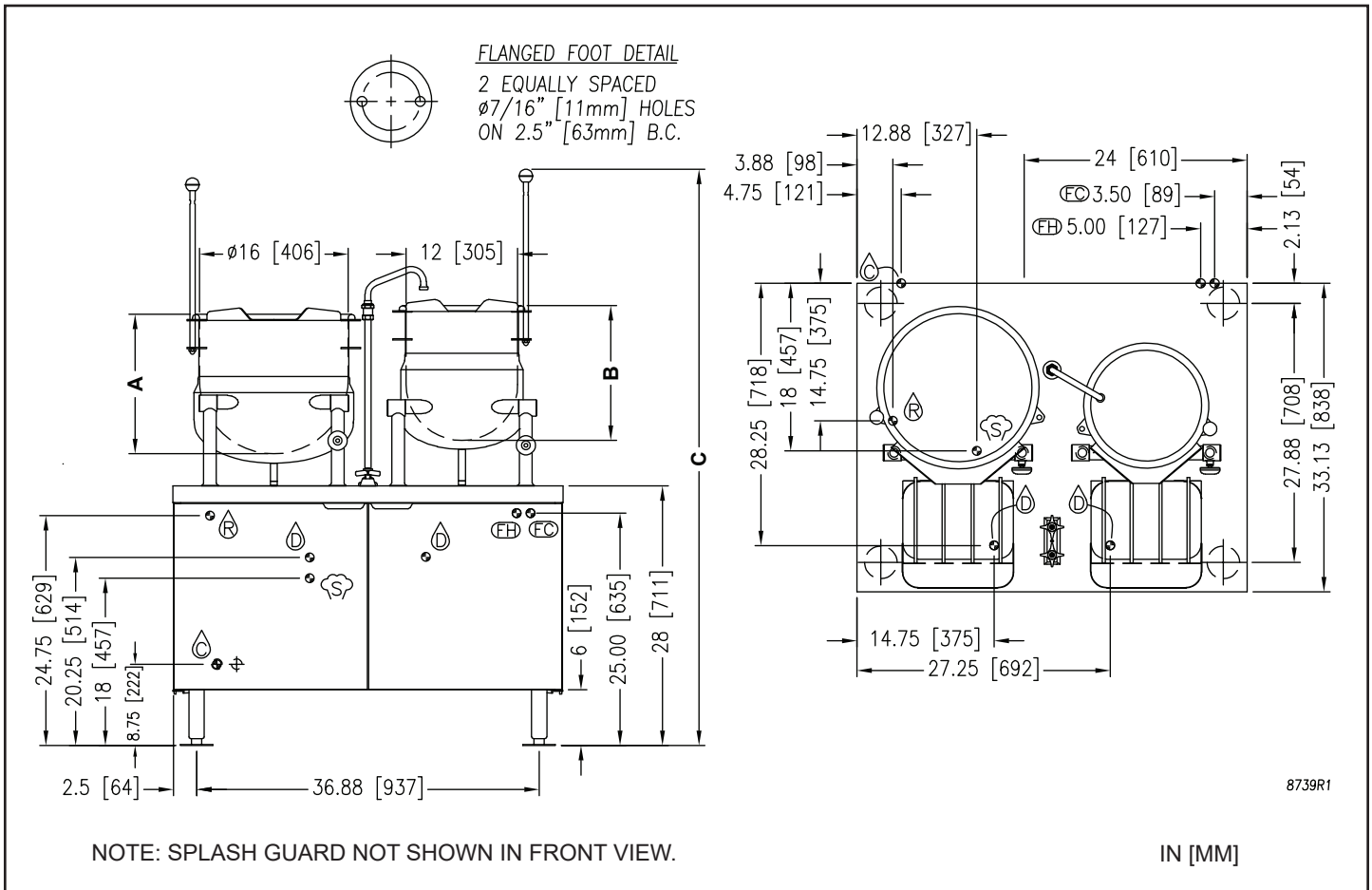
MODEL	CAPACITY	SHIPPING WEIGHT	MIN. CLEARANCE
DMT-6S-6	(2) 6 gallon (23 litre)	350 lbs. [159 kg.]	SIDES 0 [0 mm] BACK 0 [0 mm]

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**SERVICE CONNECTIONS**

- Ⓢ – STEAM SUPPLY: 3/4" (19 mm) IPS for incoming steam at 5-45 PSI(34-310 kPa).\*
- Ⓡ – CONDENSATE RETURN: 1/2" (13 mm)
- ⓔⓈ – FAUCET COLD WATER: 3/8" (10 mm) O.D. tubing at 25-50 PSI (170-345 kPa), NSF-61 compliant.
- ⓔⓗ – FAUCET HOT WATER: 3/8" (10 mm) O.D. tubing at 25-50 PSI (170-345 kPa), NSF-61 compliant.
- ⓓ – SINK DRAIN: 1-1/8" (29 mm) O.D. tubing.

\* Pressure reducing valve is required if incoming pressure exceeds 50 PSI(345 kPa).

**DIMENSIONS AND SPECIFICATIONS**

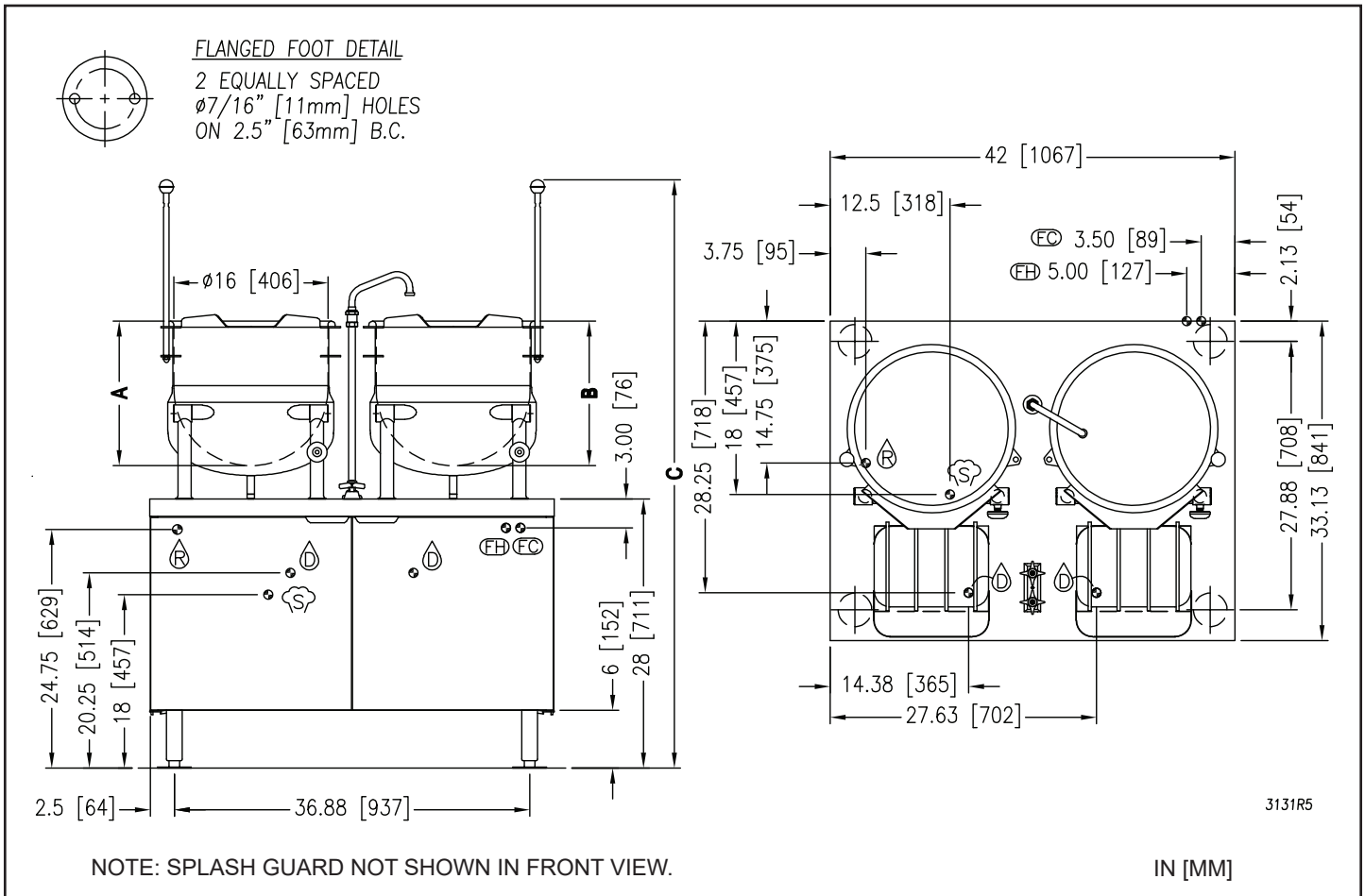
MODEL	A	B	SHIPPING WEIGHT	MINIMUM CLEARANCE	MODEL	CAPACITY
DMT-10S-6	15 [381 mm]	33.2 [843 mm]	390 lbs. [177 kg.]	SIDES 0 [0 mm] BACK 0 [0 mm]	DMT-10S-6	(1) 10 gallon (38 litre) and (1) 6 gallon (23 litre)

**DISCLAIMER**

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**SERVICE CONNECTIONS**

- STEAM SUPPLY: 3/4" (19 mm) IPS for incoming steam at 5-45 PSI (34-310 kPa).\*
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- FAUCET COLD WATER: 3/8" (10 mm) O.D. tubing at 25-50 PSI (170-345 kPa), NSF-61 compliant.
- FAUCET HOT WATER: 3/8" (10 mm) O.D. tubing at 25-50 PSI (170-345 kPa), NSF-61 compliant.
- SINK DRAIN: 1-1/8" (29 mm) O.D. tubing.

\* Pressure reducing valve is required if incoming pressure exceeds 50 PSI (345 kPa).

**DIMENSIONS AND SPECIFICATIONS**

MODEL	A	B	SHIPPING WEIGHT	MINIMUM CLEARANCE	MODEL	CAPACITY
DMT-10S-10	15 [381 mm]	33.2 [843 mm]	390 lbs. [177 kg.]	SIDES 0 [0 mm] BACK 0 [0 mm]	DMT-10S-10	(2) 10 gallon (38 litre)

**DISCLAIMER**

**Terry System Cartridge Changes / Installation** – “2-3 gallons of water MUST be purged at each cartridge change or new installation prior to water supply being fed to the steamer. Failure to do so can result in component damage within the steamer which is not covered under warranty. For additional guidance on proper installation, refer to install documentation provided with each Terry System and Replacement Cartridge Set.”

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# INTRODUCTION

## General

All direct connected steam jacketed kettles pertaining to this manual are direct steam operated pressure vessels of a double-wall stainless steel construction forming a steam chamber (jacket) enveloping the lower two thirds of the kettle bowl surface. All kettles are tilting and counter top mounted in fixed positions on legs.

## CAPACITIES

All models are suffixed with either -6, or -10 to indicate the capacity of that kettle in US gallons.

## FUNCTIONING MODE

Direct connected steam jacketed kettles consist of a stainless steel bowl and a stainless steel jacket which envelopes two thirds of the lower surface of the bowl thus forming a sealed pressure vessel (chamber) into which steam is introduced by means of a manual control valve.

The kettle bowl is the container for the food product which ideally should be of a liquid or semi-liquid consistency to achieve complete contact with the bowl surface and thus fully absorb the heat transmitted through that surface.

The temperatures required for the cooking process to function adequately must be greater than the boiling point of the liquid food product. Further, the greater the steam pressure used, the higher the temperature and consequently the quicker the cooking process. For example, steam pressurized at 30 p.s.i. attains a temperature of 274 degrees Fahrenheit (135 degrees Celsius).

In the initial stages of the cooking process when the steam comes in contact with the cold kettle bowl surface it condenses and forms considerable amounts of water. A thermostatic steam trap should be plumbed to the exit end of the kettle jacket. This trap is a mechanical device that closes on high temperatures and opens when the temperature drops thus allowing the water formed from condensate to exhaust but retain steam under pressure.

# INSTALLATION INSTRUCTIONS

## UNPACKING

### IMMEDIATELY INSPECT FOR SHIPPING DAMAGE

Immediately after unpacking, check for possible shipping damage. If the appliance is found to be damaged, save the packaging material and contact the carrier within 15 days of delivery.

We cannot assume responsibility for damage or loss incurred in transit.

Before installing, verify that the gas (natural or propane), the elevation from sea level and the electrical supply agree with the specification on the data plate. NOTE: If this appliance is being installed above 2000 feet altitude, contact your authorized service office to assure that the proper orifice size for your elevation has been installed.

## INSTALLATION

### WARNING

Plumbing connections must comply with applicable health, safety and plumbing codes.

Ideally an exhaust system should be located directly above the appliance to exhaust steam and heat generated by the appliance.

1. Set the unit in place and level using a spirit level.
2. Ascertain that a floor drain (open gap) is convenient to the appliance drain.
3. Mark hole locations on floor through anchoring holes provided in flanged adjustable feet.
4. Remove appliance and drill holes in locations marked on floor and insert proper anchoring devices.
5. Set unit back in position and re-level left to right and front to back.
6. Bolt and anchor appliance securely to the floor.
7. Seal bolts and flanged feet with Silastic or equivalent compound.
8. Connect the steam line to the kettle (3/4" IPS, 5 psi minimum to 45 psi maximum.)
9. If the incoming steam pressure is greater than the kettle maximum operating pressure, then a pressure reducing valve (supplied by others) must be installed in the line.
10. Connect hot and cold water supply to the faucet.
11. Connect the kettle condensate return line to a 2" open air gap drain or to a boiler return line. Each kettle return line must have a suitable steam trap. Boiler return lines must have a check valve (supplied by others).
12. The relief valve for the kettle(s) must not be adjusted or closed off as it is set to relieve excess pressure.
13. If large amounts of water accumulate in the steam line, it will be necessary to install one or more ball float traps (supplied by others) in the line to eliminate the water.
14. A steam line pressure gauge (supplied by others) is also recommended to determine the actual steam pressure coming to the kettle(s).

# OPERATION

## OPERATING INSTRUCTIONS

 **CAUTION**

The appliance and its parts are hot. Use care when operating, cleaning and servicing the appliance.

1. Fill kettle with product to desired level.
2. Slowly turn the steam control valve ON to full open position.
3. The water or food should boil three to four minutes per gallon. If it does not then incoming pressure should be checked to determine that it is adequate to operate the kettle efficiently.
4. Regulate steam control valve depending on type of food being prepared.
5. When food is cooked, turn off steam, remove food and clean kettle immediately to prevent residue from drying on kettle bowl surface.

# CLEANING

 **WARNING**

Disconnect the unit from the power supply before cleaning or servicing appliance.

 **CAUTION**

The equipment and its parts are hot. Use care when operating, cleaning and servicing.

 **CAUTION**

Do not use cleaning agents that are corrosive.

 **CAUTION**

DO NOT allow water near the electrical components.

Your kettle should be cleaned immediately after each use or when cooking a different product. Before cleaning, check that the kettle has cooled enough to touch it.

1. Rinse the inside of the kettle thoroughly and drain to remove any food particles.
2. Using a nylon brush, clean the kettle with a mild detergent and water. Never use steel wool or scouring powder as it will scratch stainless steel. Plain steel wool can leave small pieces of steel which can rust.
3. Rinse the inside of the kettle thoroughly with clean water. Drain the kettle by tilting or by the tangent draw-off valve, depending on model, to allow the detergent and water solution to drain.
4. Wipe the exterior of the kettle with a clean, damp cloth.

Use of cleaning agents that contain chloride, acids or salts are corrosive and may cause pitting and corrosion when used over a period of time; this will reduce the life of the appliances.

Should pitting or corrosion occur this is not covered by warranty.

Follow the recommended cleaning instructions. Use a mild detergent, warm water and rinse thoroughly.

## WHAT TO DO IF SURFACE RUST APPEARS

Metal utensils should never be used as they will scratch the surface of the equipment and rust may begin to form. To remove surface accumulation of rust from the inadvertent use of such utensils, the following procedure may be used.

 **CAUTION**

Improper use of this procedure may damage your appliance!

1. Use undiluted white vinegar with a non-abrasive scouring pad (plastic) or cloth on the affected area to remove the rust stain. The appliance should not be heated and remain at room temperature during the entire cleaning process.
2. If the stain resists removal, additional exposure time with vinegar may be required, to a maximum of one hour.
3. Thoroughly wash all of the vinegar away with fresh clear water. Dry the surface completely and allow one hour before using the appliance to cook.

Following daily and period maintenance procedures will prolong the life for your equipment. Climatic conditions - salt air - may require more thorough and frequent cleaning or the life of the equipment could be adversely affected.

# PREVENTIVE MAINTENANCE

No preventive maintenance is required other than adhering to the Cleaning Procedure Instructions.

## SAFETY VALVE MAINTENANCE AND TESTING

### CAUTION

Under normal operating conditions a “try lever test” should be performed every two months. Under severe service conditions, or if corrosion and/or deposits are noticed within the valve body, testing must be performed more often. A “try lever test” should also be performed at the end of any non-service period.

### CAUTION

Hot, high pressure fluid may be discharged from body drain and vent during “try lever” test. Care must be taken to avoid any bodily contact.

### CAUTION

High sound levels may be experienced during “try lever” test. Wear proper safety equipment and exercise extreme care! Test at, or near, half of the operating pressure by holding the test lever fully open for at least two seconds to flush the valve seat free of sediment and debris. Then release lever and permit the valve to snap shut.

If lift lever does not activate, or there is no evidence of discharge, turn off equipment immediately and contact a licensed contractor or qualified service personnel.

# TROUBLESHOOTING

## NOTICE

Contact the factory, the factory representative or local service company to perform maintenance and repairs.

## EXTREMELY SLOW COOKING TIME

Abnormally slow cooking time may be due to insufficient steam pressure and/or volume. Inlet pressures of less than 10 psi will result in slow cooking performance. Note that pressures approaching the rated kettle pressure are liable to set off the safety relief valve. If required pressure is not available to kettle, then volume of steam is not sufficient. Minimum 3/4" pipe size is required to the kettle, but if the steam generating source is at a great distance from the kettle, larger pipe will be required. Also check the core of the steam supply pipe for debris or scalants that impede steam flow. May require disassembly and inspection.

NOTES



NOTES




# DMT-6S-(6, -10, -12, DMT-10S-(6, -10, -12) & DMT-12S-(6, -10, -12) Direct Steam Modular Tilting Kettles



A product with the Southbend Steam name incorporates the best in durability and low maintenance. We all recognize, however, that replacement parts and occasional professional service may be necessary to extend the useful life of this appliance. When service is needed, contact a Southbend Steam Authorized Service Agency, or your dealer. To avoid confusion, always refer to the model number, serial number, and type of your appliance.



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